Summary of Coastal and Estuarine Monitoring Programs in New Hampshire

Final

September 30, 2003

Prepared by:

Phil Trowbridge
NHEP Coastal Scientist
New Hampshire Department of Environmental Services

This document was funded in part by the U.S. Environmental Protection Agency through a cooperative agreement with the New Hampshire Estuaries Project.

Introduction

The New Hampshire Estuaries Project (NHEP) compiles data from many coastal and estuarine monitoring programs to assess the status and trends of environmental indicators in the Great Bay and Hampton/Seabrook Harbor. The full list of NHEP environmental indicators has been published in the NHEP Monitoring Plan.

http://webster.state.nh.us/nhep/Monitoring/monitoring.htm

The following catalog is a summary of the coastal and estuarine monitoring programs that provide data for NHEP indicators or for State water quality assessments. This list is limited to long-term monitoring programs that do not have an end date.

Direct any questions about this list to Phil Trowbridge, NHEP Coastal Scientist, at (603) 271-8872 or ptrowbridge@des.state.nh.us.

Organization: **Great Bay Coast Watch**

Program **Water Quality Monitoring Program**

Project Name: ***Harmful Algal Bloom Monitoring Program***

Purpose: To monitor the occurrence of harmful phytoplankton species in NH coastal waters.

Study Design:

Parameters: Phytoplankton species from a 3 minute tow, temperature, salinity, DO, and Secchi depth.

Frequency: Weekly from April to November

Stations: 7 stations along the NH coast

Area: Great Bay and Atlantic Coast

Start Date: 1999 *Duration:* Ongoing

Comments:

Contact:	**Group:**	**Phone:**	**e-mail:**
Ann Reid	Great Bay Coast Watch	(603) 749-1565	ann.reid@unh.edu

Organization Website http://www.gbcw.unh.edu **Project Website**

Organization: **Great Bay Coast Watch**

Program **Water Quality Monitoring Program**

Project Name: ***Water Quality Monitoring Program***

Purpose: To monitor the fecal coliform content of water sampled at a wide-array of stations and to report unusually high or low counts to appropriate individuals and agencies.

Study Design:

Parameters: Fecal coliforms, temperature, salinity, pH, dissolved oxygen, Secchi depth

Frequency: Twice monthly at high and low tides from April to November

Stations: 21 sites

Area: Great Bay, Portsmouth Harbor

Start Date: 1990 *Duration:* Ongoing

Comments:

Contact:	**Group:**	**Phone:**	**e-mail:**
Ann Reid	Great Bay Coast Watch	(603) 749-1565	ann.reid@unh.edu

Organization Website http://www.gbcw.unh.edu **Project Website**

Organization: **Great Bay National Estuarine Research Reserve**

Program **System Wide Monitoring Program**

Project Name: ***Estuarine Water Quality Monthly Monitoring Program***

Purpose: To monitor trends in nutrient and eutrophication parameters in the Great Bay and its tributaries.

Study Design:

Parameters: Water samples analyzed for: Salinity, Temperature, pH, DO, TSS, POM, chlorophyll-a, phaeopigments, ammonia, sum of nitrate and nitrite, orthophosphate, dissolved organic nitrogen, particulate organic nitrogen, and light attenuation.

Frequency: Monthly (samples collected at high and low tides on same day) except for the Oyster River site where 10 samples/day are collected every month to evaluate tidal effects on water quality.

Stations: 4 sites coincident with the four GBNERR datasondes (Squamscott R., Lamprey R., Oyster R., and middle of Great Bay).

Area: Great Bay

Start Date: 1988 *Duration:* Ongoing

Comments: UNH (the contractor) also collects monthly samples at Adams Point, Squamscott R @ Chapmans Landing, and the Coastal Marine Lab for the same analyses to extend long-term trend data that started to be recorded at these sites in the 1980s.

Contact:	**Group:**	**Phone:**	**e-mail:**
Jonathan Pennock	UNH Jackson Estuarine Laboratory	(603) 862-2921	jonathan.pennock@unh.edu

Organization Website http://www.greatbay.org **Project Website** http://ciceet.unh.edu/great_bay/

Organization: **Great Bay National Estuarine Research Reserve**

Program **System Wide Monitoring Program**

Project Name: ***Datasonde Program***

Purpose: To provide a nearly continuous record of physico-chemical water quality in Great Bay and its tributaries.

Study Design:

Parameters: Salinity, water level, conductivity, temperature, pH, turbidity, DO

Frequency: 30 minute intervals during non-winter months

Stations: 4 sites; Great Bay, Squamscott River, Lamprey River, and Oyster River

Area: Great Bay

Start Date: 1995 *Duration:* Ongoing

Comments: A fifth datasonde is deployed at Fort Point in Portsmouth Harbor and is maintained by UNH-JEL. A sixth sonde is installed in the Salmon Falls River periodically. Instruments removed periodically for servicing

Contact:	**Group:**	**Phone:**	**e-mail:**
Jonathan Pennock	UNH Jackson Estuarine Laboratory	(603) 862-2921	jonathan.pennock@unh.edu

Organization Website http://www.greatbay.org **Project Website** http://cdmo.baruch.sc.edu/

Organization: **N.H. Department of Environmental Services**

Program **Ambient Rivers Monitoring Program**

Project Name: ***Enhanced Ambient Rivers Monitoring Program***

Purpose: To assess the water quality of the major tributaries to Great Bay and Little Harbor

Study Design:

Parameters: DO, temperature, conductivity, pH, turbidity, total Kjeldahl nitrogen, ammonia, sum of nitrate and nitrite, total phosphorous, BOD, E. coli, chlorophyll-a, TSS

Frequency: Monthly from March to December

Stations: 7 tributaries to Great Bay at head of tide (Winnicut, Squamscott, Lamprey, Oyster, Bellamy, Cocheco, Salmon Falls) and 2 tributaries to Little Harbor (Sagamore Creek, Berrys Brook)

Area: Tributaries to Great Bay and Little Harbor

Start Date: 2001 *Duration:* Ongoing

Comments:

Contact:	**Group:**	**Phone:**	**e-mail:**
Natalie Landry	DES Watershed Management Bureau	(603) 430-0877	nlandry@des.state.nh.us

Organization Website http://www.des.state.nh.us **Project Website**

Organization: **N.H. Department of Environmental Services**
Program **Beach Program**
Project Name: ***Tidal Beach Program***

Purpose: To monitor bacterial water quality at designated tidal bathing beaches in New Hampshire

Study Design:

Parameters: Enterococci

Frequency: Weekly in July and August, 3 samples collected per visit

Stations: 15 tidal bathing beaches

Area: Tidal designated beaches

Start Date: *Duration:* Ongoing

Comments: The DES Beach Program also monitors bacteria concentrations at freshwater designated beaches.

Contact:	**Group:**	**Phone:**	**e-mail:**
Jody Connor	DES Watershed Management Bureau	(603) 271-3414	jconnor@des.state.nh.us

Organization Website http://www.des.state.nh.us **Project Website** http://www.des.state.nh.us/factsheets/bb/bb-

Organization: **N.H. Department of Environmental Services**
Program **Gulfwatch Program**
Project Name: ***Gulfwatch Program***

Purpose: To monitor marine habitat exposure to organic and inorganic contaminants.

Study Design:

Parameters: Heavy metals and toxic organic contaminants in blue mussel tissue.

Frequency: Three annual trend sites and a rotating schedule for other sites.

Stations: The three annual trend sites are located in Clarks Cove (Portsmouth Harbor), Dover Point, and Hampton/Seabrook Harbor. One or two other stations are sampled each year.

Area: Great Bay Estuary, Rye Harbor, Hampton-Seabrook Harbor

Start Date: 1991 *Duration:* Ongoing

Comments: The Gulf of Maine Council Gulfwatch Program funds two sites per year and the NH Estuaries Program funds 2 sites/year.

Contact:	**Group:**	**Phone:**	**e-mail:**
Phil Trowbridge	DES Watershed Management Bureau	(603) 271-8872	ptrowbridge@des.state.nh.us

Organization Website http://www.des.state.nh.us **Project Website** http://www.gulfofmaine.org/library/gulfwatc

Organization: **N.H. Department of Environmental Services**

Program **National Coastal Assessment**

Project Name: ***Estuarine Water Column Probability Based Monitoring Program***

Purpose: To assess the health and condition of NH estuaries and track changes over time.

Study Design:

Parameters: The water column is tested for: Temperature, salinity, pH, Secchi depth, nutrients (NO2+NO3, NH4, PO4), chlorophyll-a, silica, total suspended solids, dissolved oxygen, transmissometry, bacteria indicators, fish community composition, fish pathologies, fish parasites, fish tissue chemistry, occurrence of exotic fish species, occurrence and abundance of submerged aquatic vegetation and macroalgae, habitat type delinations.

Frequency: Each station is assessed once every 2 years.

Stations: 82 sites in a probabilistic sampling design.

Area: All tidal waters

Start Date: 2000 *Duration:* Ongoing

Comments: UNH (Dr. Steve Jones, shj@cisunix.unh.edu) is the contractor for DES on this project.

Contact:	**Group:**	**Phone:**	**e-mail:**
Phil Trowbridge	DES Watershed Management Bureau	(603) 271-8872	ptrowbridge@des.state.nh.us

Organization Website http://www.des.state.nh.us **Project Website** http://www.epa.gov/emap/nca/

Organization: **N.H. Department of Environmental Services**

Program **National Coastal Assessment**

Project Name: ***Estuarine Sediment Probability Based Monitoring Program***

Purpose: To assess the health and condition of NH estuaries and track changes over time.

Study Design:

Parameters: Sediment is tested for: Metals, PAH's, PCB's, pesticides, sediment toxicity, total organic carbon, grain size, and benthic community composition and abundance.

Frequency: Each station is assessed once every 4 years. Five stations are tested yearly.

Stations: 82 sites in a probabilistic sampling design.

Area: All tidal waters

Start Date: 2000 *Duration:* Ongoing

Comments: UNH (Dr. Steve Jones, shj@cisunix.unh.edu) is the contractor for DES on this project.

Contact:	**Group:**	**Phone:**	**e-mail:**
Phil Trowbridge	DES Watershed Management Bureau	(603) 271-8872	ptrowbridge@des.state.nh.us

Organization Website http://www.des.state.nh.us **Project Website** http://www.epa.gov/emap/nca/

Organization: **N.H. Department of Environmental Services**

Program **National Coastal Assessment**

Project Name: ***Estuarine Water Quality Monthly Monitoring Program***

Purpose: To assess the health and condition of NH estuaries and track changes over time.

Study Design:

Parameters: Bacteria concentrations (fecal coliforms, enterococci, E. coli as well as C. perfringens at some sites), nutrients (nitrogen, phosphorus), silica, suspended solids, dissolved oxygen, chlorophyll-a.

Frequency: Monthly between March and December.

Stations: 13 NCA sites in a probabilistic sampling design, plus six stations that have been previously monitored by GBNERR from 1988-2001.

Area: All tidal waters

Start Date: 1988 *Duration:* Ongoing

Comments: UNH (Dr. Steve Jones, shj@cisunix.unh.edu) is the contractor for DES on this project. Samples from six former GBNERR stations are analyzed monthly for just bacteria to extend records of historic trends begun in the 1980s.

Contact:	**Group:**	**Phone:**	**e-mail:**
Phil Trowbridge	DES Watershed Management Bureau	(603) 271-8872	ptrowbridge@des.state.nh.us

Organization Website http://www.des.state.nh.us **Project Website** http://www.epa.gov/emap/nca/

Organization: **N.H. Department of Environmental Services**
Program **NPDES Permit Monitoring**
Project Name: ***NPDES Permit Monitoring***

Purpose: To monitor discharges from municipal wastewater treatment plants and industry.

Study Design:

Parameters: BOD5, TSS, chlorine, bacteria, pH, whole effluent toxicity (WET), metals

Frequency: Variable

Stations: 18 municipal and 13 industrial WWTFs in the coastal watershed

Area: Coastal watershed

Start Date: Variable *Duration:* Ongoing

Comments: Exact parameters and frequency vary with permit. NHDES inspectors inspect the WWTFs each year and sample them at least once every 5 years for most parameters.

Contact:	**Group:**	**Phone:**	**e-mail:**
George Berlandi	DES Wastewater Engineering Bureau	(603) 271-2458	gberlandi@des.state.nh.us

Organization Website http://www.des.state.nh.us **Project Website**

Organization: **N.H. Department of Environmental Services**

Program **Shellfish Program**

Project Name: ***Routine Monitoring Program***

Purpose: The Shellfish Program regularly collects water quality samples to ensure that information used to make decisions on open/closed areas is kept current, and to track changes in water quality over time.

Study Design:

Parameters: Fecal coliforms, temperature, salinity, pH

Frequency: Approximately monthly (9-12 samples per station per year)

Stations: 60-75 sites

Area: All tidal waters

Start Date: 1988 *Duration:* Ongoing

Comments:

Contact:	**Group:**	**Phone:**	**e-mail:**
Chris Nash	DES Watershed Management Bureau	(603) 430-7900	cnash@des.state.nh.us

Organization Website http://www.des.state.nh.us **Project Website** www.des.state.nh.us/wmb/shellfish

Organization: **N.H. Department of Environmental Services**

Program **Shellfish Program**

Project Name: ***PSP/Red Tide Monitoring Program***

Purpose: To determine whether shellfishing closures are needed to protect the public from paralytic shellfish poisoning (PSP) toxin caused by phytoplankton blooms in the Gulf of Maine.

Study Design:

Parameters: PSP toxin in blue mussel tissue

Frequency: Weekly April to October

Stations: 2 sites located at the Hampton-Seabrook Harbor and Isles of Shoals

Area: Atlantic coast

Start Date: *Duration:* Ongoing

Comments:

Contact:	**Group:**	**Phone:**	**e-mail:**
Chris Nash	DES Watershed Management Bureau	(603) 430-7900	cnash@des.state.nh.us

Organization Website http://www.des.state.nh.us **Project Website** www.des.state.nh.us/wmb/shellfish

Organization: **N.H. Fish and Game Department**

Program **Anadromous Fish Investigations (F-61R Reporting)**

Project Name: ***River Herring Restoration Program***

Purpose: To restore river herring (Alosa pseudoharengus and Alosa aestivalis) to their former abundance and distribution in the coastal areas of New Hampshire to the extent possible, and monitor the adult spawning populations.

Study Design:

Parameters: Herring counts, sex, size/age distribution of returning adult fish

Frequency: Daily during spring runs

Stations: Fish ladders in the Cocheco, Exeter, Oyster, Lamprey, Taylor and Winnicut Rivers

Area: Great Bay Estuary, Hampton Harbor

Start Date: 1972 *Duration:* Ongoing

Comments:

Contact:	**Group:**	**Phone:**	**e-mail:**
Brian Smith	NHF&G Marine Fisheries Division	(603) 868-1095	bmsmith@starband.net

Organization Website http://www.wildlife.state.nh.us **Project Website**

Organization: **N.H. Fish and Game Department**

Program **Anadromous Fish Investigations (F-61R Reporting)**

Project Name: ***Atlantic Salmon Restoration Program***

Purpose: To produce a spawning run of Atlantic salmon (Salmo salar) in the Cocheco and Lamprey rivers with sufficient numbers of returning adult females to provide a self sustaining supply of eggs from wild fish.

Study Design:

Parameters: Abundance of Juvenile Salmon upstream at fish ladders and yearly returns of adult salmon

Frequency: Twice Yearly (Spring and Fall)

Stations: Cocheco and Lamprey River fish ladder

Area: Great Bay Estuary

Start Date: 1992 *Duration:* Ongoing

Comments:

Contact:	**Group:**	**Phone:**	**e-mail:**
Brian Smith	NHF&G Marine Fisheries Division	(603) 868-1095	bmsmith@starband.net

Organization Website http://www.wildlife.state.nh.us **Project Website**

Organization: **N.H. Fish and Game Department**

Program **Anadromous Fish Investigations (F-61R Reporting)**

Project Name: ***Rainbow Smelt Program***

Purpose: To annually monitor the resource of rainbow smelt (Osmerus mordax) and its fishery in the Great Bay Estuary system.

Study Design:

Parameters: Rainbow Smelt abundance of adults and eggs

Frequency: Annually during the winter months (eggs in march)

Stations: Bellamy, Oyster, Lamprey, Winnicut and Squamscott Rivers

Area: Great Bay Estuary

Start Date: 1978 *Duration:* Ongoing

Comments: Conducted through Angler Interviews and Egg Counts

Contact:	**Group:**	**Phone:**	**e-mail:**
Brian Smith	NHF&G Marine Fisheries Division	(603) 868-1095	bmsmith@starband.net

Organization Website http://www.wildlife.state.nh.us **Project Website**

Organization: **N.H. Fish and Game Department**

Program **Anadromous Fish Investigations (F-61R Reporting)**

Project Name: ***Coastal Shad Restoration Program***

Purpose: To restore American shad to the coastal river systems of New Hampshire to a level that will produce self-sustaining spawning runs and to monitor the effects of restoration efforts.

Study Design:

Parameters: Shad count,sex, size/age distribution of returning adult fish

Frequency: Daily from April to June

Stations: Fish ladders at Cocheco, Exeter and Lamprey Rivers

Area: Great Bay Estuary

Start Date: 1983 *Duration:* Ongoing

Comments:

Contact:	**Group:**	**Phone:**	**e-mail:**
Brian Smith	NHF&G Marine Fisheries Division	(603) 868-1095	bmsmith@starband.net

Organization Website http://www.wildlife.state.nh.us **Project Website**

Organization: **N.H. Fish and Game Department**

Program **ASMFC-Managed Species Monitoring Programs (ACFCMA Reporting)**

Project Name: ***Marine Recreational Fishing Statistical Surveys***

Purpose: To obtain estimates of total catch, total effort, catch per unit effort, percent species composition of the catch, and length frequency data for harvested fish.

Study Design:

Parameters: Recreational harvest of Striped Bass, Cod, Bluefish, Pollock, Mackerel, and White Flounder.

Frequency: Peak times during fishing season

Stations: Variable

Area: All tidal waters

Start Date: *Duration:* Ongoing

Comments: Recreational fisherman are surveyed at docks and over the telephone using a statistically-based study design.

Contact:	**Group:**	**Phone:**	**e-mail:**
Brian Smith	NHF&G Marine Fisheries Division	(603) 868-1095	bmsmith@starband.net

Organization Website http://www.wildlife.state.nh.us **Project Website** http://www.st.nmfs.gov/st1/recreational/the_

Organization: **N.H. Fish and Game Department**

Program **ASMFC-Managed Species Monitoring Programs (ACFCMA Reporting)**

Project Name: ***Estuarine Juvenile Finfish Seine Surveys***

Purpose: To monitor the abundance of juvenile finfish in NH's estuaries.

Study Design:

Parameters: Abundance of juvenile finfish and shellfish predators (green crab) by beach seine hauls.

Frequency: Monthly from June to November

Stations: 11 stations in the Great Bay and Piscataqua River, 4 stations in Hampton Harbor

Area: Great Bay Estuary, Hampton Harbor

Start Date: 1996 *Duration:* Ongoing

Comments:

Contact:	**Group:**	**Phone:**	**e-mail:**
Brian Smith	NHF&G Marine Fisheries Division	(603) 868-1095	bmsmith@starband.net

Organization Website http://www.wildlife.state.nh.us **Project Website**

Organization: **N.H. Fish and Game Department**

Program **ASMFC-Managed Species Monitoring Programs (ACFCMA Reporting)**

Project Name: ***Lobster Sea Sampling Program***

Purpose: To monitor the abundance and size of lobsters in NH coastal waters

Study Design:

Parameters: Lobster abundance and size classes

Frequency: Monthly from June to October

Stations: Throughout the Piscataqua River and NH near-shore waters

Area: Piscataqua River and Atlantic Ocean

Start Date: *Duration:* Ongoing

Comments:

Contact:	**Group:**	**Phone:**	**e-mail:**
Cheri Patterson	NHF&G Marine Fisheries Division	(603) 868-1095	bmsmith@starband.net

Organization Website http://www.wildlife.state.nh.us **Project Website**

Organization: **N.H. Fish and Game Department**

Program **ASMFC-Managed Species Monitoring Programs (ACFCMA Reporting)**

Project Name: ***Juvenile Lobster Surveys***

Purpose:

Study Design:

Parameters: Juvenile lobster abundance monitored by SCUBA divers.

Frequency: Monthly from April to January

Stations: Adams Pt, Woodman Pt, Nannie Island, Piscataqua and Squamscott Rivers

Area: Great Bay Estuary; Atlantic coast

Start Date: *Duration:* Ongoing

Comments:

Contact:	**Group:**	**Phone:**	**e-mail:**
Cheri Patterson	NHF&G Marine Fisheries Division	(603) 868-1095	bmsmith@starband.net

Organization Website http://www.wildlife.state.nh.us **Project Website**

Organization: **N.H. Fish and Game Department**

Program **Oyster Resource Monitoring Programs**

Project Name: ***Oyster Density Monitoring Program***

Purpose: To assess the abundance and community structure of oysters at beds in the Great Bay

Study Design:

Parameters: Adult, juvenile, and spat oyster density, and dimensions of oyster beds

Frequency: Annually in October/November for density; Every 5 years for bed dimensions

Stations: 6 sites: Adams Point, Nannie Island, Woodman Point, Oyster River bed, Piscataqua River bed, and Squamscott River bed.

Area: Great Bay Estuary

Start Date: 1991 *Duration:* Ongoing

Comments:

Contact:	**Group:**	**Phone:**	**e-mail:**
Brian Smith	NHF&G Marine Fisheries Division	(603) 868-1095	bmsmith@starband.net

Organization Website http://www.wildlife.state.nh.us **Project Website**

Organization: **N.H. Fish and Game Department**
Program **Oyster Resource Monitoring Programs**
Project Name: ***Oyster Recreational Harvest Survey***

Purpose: To determine number of oysters harvested during a season

Study Design:

Parameters: Recreational harvest of oysters from all beds.

Frequency: Every 3 years

Stations: There are no fixed stations for this program

Area: Great Bay Estuary

Start Date: 1996 *Duration:* Ongoing

Comments: Oyster harvest information is collected via a mail survey of oyster licensees.

Contact:	**Group:**	**Phone:**	**e-mail:**
Brian Smith	NHF&G Marine Fisheries Division	(603) 868-1095	bmsmith@starband.net

Organization Website http://www.wildlife.state.nh.us **Project Website**

Organization: **N.H. Fish and Game Department**

Program **Oyster Resource Monitoring Programs**

Project Name: ***Oyster Disease Monitoring Program***

Purpose: To determine quantity of oysters infected with pathogens

Study Design:

Parameters: Prevalence of MSX and Dermo in oysters

Frequency: Annually

Stations: 4 sites tested biennially (Adams Point bed, Woodman Point bed, Oyster River bed). One site tested annually (Nannie Island bed). Other sites (Piscataqua River bed and Squamscott River bed) tested less frequently.

Area: Great Bay Estuary

Start Date: 1995 *Duration:* Ongoing

Comments:

Contact:	**Group:**	**Phone:**	**e-mail:**
Brian Smith	NHF&G Marine Fisheries Division	(603) 868-1095	bmsmith@starband.net

Organization Website http://www.wildlife.state.nh.us **Project Website**

Organization: **N.H. Fish and Game Department**
Program **Waterfowl Monitoring Program**
Project Name: ***Winter Waterfowl Volunteer Surveys***

Purpose: To monitor type and quantity of waterfowl wintering in the Great Bay

Study Design:

Parameters: Abundance and type of waterfowl present during winter months

Frequency: Every 2 weeks from January to March

Stations: 3 or 4 teams cover the entire bay

Area: Great Bay Estuary

Start Date: *Duration:* Ongoing

Comments:

Contact:	**Group:**	**Phone:**	**e-mail:**
Brian Smith	Great Bay National Estuarine Research Reserve	(603) 868-1095	bmsmith@starband.net

Organization Website http://www.wildlife.state.nh.us **Project Website**

Organization: **N.H. Fish and Game Department**

Program **Waterfowl Monitoring Program**

Project Name: ***Annual Waterfowl Aerial Survey***

Purpose: To monitor type and quantity of waterfowl wintering in Great Bay

Study Design:

Parameters: Abundance and type of waterfowl present in the estuary during winter months

Frequency: Annually in January

Stations: One day aerial overflight

Area: Great Bay Estuary

Start Date: 1955 *Duration:* Ongoing

Comments: Simultaneous count with other eastern states. Data are aggregated for the Atlantic Flyway to estimate the total population of migrating waterfowl.

Contact:	**Group:**	**Phone:**	**e-mail:**
Ed Robinson	NHF&G	(603) 271-2461	erobinson@wildlife.state.nh.us

Organization Website http://www.wildlife.state.nh.us **Project Website**

Organization: **National Oceanic and Atmospheric Administration**

Program **National Marine Fisheries Service**

Project Name: ***Commercial Fishery Landing Monitoring Program***

Purpose: To compile data on annual commercial fish catch to create estimates of population

Study Design:

Parameters: Commercial catch (lbs) for 33 fish species, 11 invertebrate species

Frequency: Statistics compiled yearly

Stations: Commercial fish piers

Area: All tidal waters

Start Date: *Duration:* Ongoing

Comments:

Contact:	**Group:**	**Phone:**	**e-mail:**
N/A	NMFS	(301) 713-2328	st1comm@www.st.nmfs.gov

Organization Website http://www.noaa.gov **Project Website** http://www.st.nmfs.gov/commercial/index.ht

Organization: **National Oceanic and Atmospheric Administration**

Program **National Status and Trends Program**

Project Name: ***Mussel Watch Program***

Purpose: To monitor chemical contaminants in mussel tissue to determine which coastal regions are at greatest risk in terms of environmental quality

Study Design:

Parameters: Heavy metals and toxic organics in blue mussel tissue

Frequency: Biennially

Stations: 1 site at Dover Point in NH

Area: Nationwide

Start Date: 1986 *Duration:* Ongoing

Comments: The station at Dover Point was established in 1997 and has been sampled in 1997 and 1999.

Contact:	**Group:**	**Phone:**	**e-mail:**
Jawed Hameedi	NOAA	(301) 713-3034 x 170	jawed.hameedi@noaa.gov

Organization Website http://www.noaa.gov **Project Website** http://ccmaserver.nos.noaa.gov/NSandT/NS

Organization: **Seabrook Station**
Program **Seabrook Station Environmental Monitoring Program**
Project Name: ***Zooplankton Monitoring Program***

Purpose:

Study Design:

Parameters: Density of bivalve larvae and macrozooplankton

Frequency: 2-4 times per week from April to October

Stations: Coolant intake and far field

Area: Atlantic coast

Start Date: *Duration:* Ongoing

Comments:

Contact:	**Group:**	**Phone:**	**e-mail:**
Ron Sher	Seabrook Station	(603) 773-7729	sherra@naesco.com

Organization Website http://www.seabrookstation.com **Project Website**

Organization: **Seabrook Station**

Program **Seabrook Station Environmental Monitoring Program**

Project Name: ***Soft Shell Clam Monitoring Program***

Purpose: To determine the spatial and temporal patterns of abundance of various life stages of soft-shell clams in the vicinity of Hampton Harbor, NH, and determine whether these patterns have been affected by operation of Seabrook Station.

Study Design:

Parameters: Bivalve larvae, clam density, green crab CPUE, harvest pressure, flat size, sarcomatous neoplasia in clams

Frequency: Weekly for larvae, yearly for density, twice per month for crabs, weekly for harvest pressure, and approximately every 5 years for flat dimensions

Stations: 3 for larvae, variable for density, 4 for crab abundance

Area: Hampton Harbor

Start Date: c. 1970 *Duration:* Ongoing

Comments:

Contact:	**Group:**	**Phone:**	**e-mail:**
Ron Sher	Seabrook Station	(603) 773-7729	sherra@naesco.com

Organization Website http://www.seabrookstation.com **Project Website**

Organization: **Seabrook Station**
Program **Seabrook Station Environmental Monitoring Program**
Project Name: ***Crustacean Monitoring Program***

Purpose:

Study Design:

Parameters: Lobster, Jonah Crab, and Rock Crab abundance (adults and larvae)

Frequency: Weekly monitoring for larvae. Every other day for adults by trap hauls (June through November).

Stations: 3 sites for larvae and 2 sites for adult traps

Area: Atlantic coast

Start Date: *Duration:* Ongoing

Comments:

Contact:	**Group:**	**Phone:**	**e-mail:**
Ron Sher	Seabrook Station	(603) 773-7729	sherra@naesco.com

Organization Website http://www.seabrookstation.com **Project Website**

Organization: **Seabrook Station**
Program **Seabrook Station Environmental Monitoring Program**
Project Name: ***Macrobenthos Monitoring Program***

Purpose:

Study Design:

Parameters: Attached epifauna and epiflora

Frequency: 3 times per year

Stations: 6 sites outside the estuaries

Area: Atlantic coast

Start Date: *Duration:* Ongoing

Comments: destructive and non-destructive methods used

Contact:	**Group:**	**Phone:**	**e-mail:**
Ron Sher	Seabrook Station	(603) 773-7729	sherra@naesco.com

Organization Website http://www.seabrookstation.com **Project Website**

Organization: **Seabrook Station**

Program **Seabrook Station Environmental Monitoring Program**

Project Name: ***Finfish Monitoring Program***

Purpose: To monitor changes over time in the abundance of finfish species in the vicinity of Seabrook Station.

Study Design:

Parameters: Ichthyoplankton and fish species (demersal and estuarine)

Frequency: 1-2 samples per month from April to November

Stations: 3 offshore, 3 in estuary

Area: Hampton Harbor Atlantic Ocean

Start Date: *Duration:* Ongoing

Comments: Estuarine fish collected by seine hauls, offshore fish collected by trawls.

Contact:	**Group:**	**Phone:**	**e-mail:**
Ron Sher	Seabrook Station	(603) 773-7729	sherra@naesco.com

Organization Website http://www.seabrookstation.com **Project Website**

Organization: **U.S. Department of the Navy**

Program **Offshore Monitoring Program**

Project Name: ***Interim Offshore Monitoring Program***

Purpose: To determine occurrence of toxic contaminants in sediment, mussel tissue and lobster tissue

Study Design:

Parameters: Metals, PAHs, PCBs, and pesticides in sediment, mussel tissue and lobster tissue.

Frequency: Twice per year

Stations: 14 sites in "areas of concern" near PNSY, 4 reference sites in the Piscataqua River, Back Channel, and Sagamore Creek

Area: Portsmouth Harbor

Start Date: 1999 *Duration:* Ongoing

Comments:

Contact:	**Group:**	**Phone:**	**e-mail:**
Fred Evans	Naval Facilities Engineering Command (NAVFAC)	(610) 595-0567 ext. 159	evansfj@efane.navfac.navy.mil

Organization Website http://www.navfac.navy.mil **Project Website**

Organization: **University of New Hampshire**
Program **Eelgrass Mapping Program**
Project Name: ***Eelgrass Mapping Program***

Purpose: To monitor the distribution of eelgrass in the Great Bay estuary

Study Design:

Parameters: Distribution of eelgrass mapped using low altitude aerial imagery and groundtruthing by boat

Frequency: Annually

Stations: The entire estuary is mapped each year

Area: Great Bay Estuary

Start Date: 1986 *Duration:* Ongoing

Comments: The mapping is conducted by the UNH Seagrass Ecology Group under contract to the NH Estuaries Project.

Contact:	**Group:**	**Phone:**	**e-mail:**
Fred Short	UNH/Seagrass Ecology Group	(603) 862-5134	fred.short@unh.edu

Organization Website http://ww.unh.edu **Project Website**